

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 3-27 are presently pending in this application, Claims 1 and 2 having been canceled and Claims 26 and 27 having been added by the present Amendment, Claims 3-25 having been withdrawn from further consideration as directed to a non-elected species.

In the outstanding Office Action, Claims 1 and 2 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,376,052.

New Claims 26 and 27 are fully supported by the specification, drawings and claims as originally filed. Applicants therefore submit that no new matter has been introduced.

Claims 26 and 27 are readable on the elected specie I.

Briefly recapitulating, Claim 26 is directed to a multi-layer printed circuit board. For example, referring to the non-limiting embodiment of Fig. 6, a multi-layer printed board 10 includes a core substrate 30, first and second buildup layers 80U and 80D formed on the first and second sides of the core substrate 30 respectively, through holes 35, through hole lands 34, first via holes and second via holes. The first buildup layer 80U has first interlayer resin insulating layers 50, 60 and first conductor layers 58 which are alternately provided. The second buildup layer 80D has second interlayer resin insulating layers 50, 60 and second conductor layers 58 which are alternately provided. Each of the through holes 35 electrically connects the first conductor layers and the second conductor layers at opposite ends of each of the through holes. Each of the through hole lands 34 is electrically connected to each of the through holes between the opposite ends of each of the through holes. The first via holes are provided right on the ends of the through holes to be electrically connected to the through

holes. The second via holes are provided to be electrically connected to the through hole lands.

According to the present invention recited in Claim 26, each of the through holes electrically connects the first conductor layers and the second conductor layers at opposite ends of each of the through holes. The second via holes are provided to be electrically connected to the through hole lands which are electrically connected to each of the through holes between the opposite ends of each of the through holes. Accordingly, in the present invention recited in Claim 26, electric current flows from the through hole to a plurality of electric paths, for example, the path from the through hole to the conductor layer via the end of the through hole and the path from the through hole to the second via hole via the through hole land. As a result, since an amount of current flowing in each path in the buildup layer decreases, the transmission speed of electric signal can be increased.

The Office Action asserts that Claim 1 of U.S. Patent No. 6,376,052 recites a multi-layer printed circuit board including the core substrate and build up layers each having interlayer resin insulating layers and conductive layers alternatively provided, the conductor layers connected to one another by via holes, a through hole formed to penetrate said core substrate and interlayer resin insulating layers formed on both the sides of the core substrate, the through hole filled with resin, the via hole formed right on said through hole.

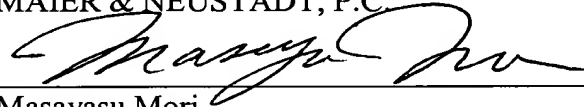
However, Claim 1 of the U.S. Patent No. 6,376,052 fails to recite or even suggest that second via holes are provided to be electrically connected to the through hole lands which is electrically connected to each of the through holes between the opposite ends of each of the through holes. Therefore, Claim 1 of the U.S. Patent No. 6,376,052 does not obviate the invention recited in Claim 26. Therefore, Claim 26 is believed to be allowable.

Substantially the same arguments as set forth above with regard to Claim 26 also apply to dependent Claim 27, which depends directly from Claim 26. Accordingly, dependent Claim 27 is also believed to be allowable.

Consequently, in view of the present amendment, it is respectfully submitted that this application is in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Masayasu Mori
Registration No. 47,301

Customer Number

22850

Tel: (703) 413-3000

Fax: (703) 413 -2220

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